

REMARKS

Claims 1-18 are pending in the application, with claims 1, 4, 7, 11, 15 and 17 being independent. Claims 1, 4, 10 and 13 have been amended for clarity, and claims 14-18 have been added. Support for the amendments to claims 1 and 4 may be found in the application at, for example, page 10, lines 20-21 (noting that the edge of the photoresist mask pattern is recessed by oxygen plasma treatment) and lines 25-27 (noting that the second and third conductive layers are selectively etched using a mixture of BCl_3 and Cl_2 as the etching gas). New claims 14, 16 and 18 find support in the application at, for example, page 9, lines 2-15. New claims 15 and 17 find support in the application at, for example, Figs. 1A-1D and the associated text at page 8, line 27 to page 11, line 29. No new matter has been introduced.

Initially, applicant thanks the Examiner for the interview granted to the undersigned on October 18, 2005. The substance of the interview is set forth in the remarks below.

Claims 1-13 have been rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki (U.S. Patent Publication 2002/0158288). As discussed at the interview, applicant notes that Yamazaki is commonly owned with the present application and, since it only qualifies as prior art under 102(e), may not be used as the basis of a rejection under 35 U.S.C. 103.

With respect to claims 1 and 4, and their dependent claims, applicant requests reconsideration and withdrawal of this rejection because, as discussed at the interview, Yamazaki does not describe or suggest, after recessing the edge of a mask pattern, forming a second conductive layer pattern by selectively etching a second conductive layer (as recited in claim 1) or second and third conductive layers (as recited in claim 4) "in accordance with the recessed mask pattern using a processing step different from a processing step used to recess the edge of the mask pattern remaining on the first conductive layer pattern," as recited in amended claims 1 and 4. As noted above, support for this amendment is set forth in the application at, for example, page 10, lines 20-21 and 25-27, where there is a discussion of the use of different processing steps to recess the edge of the photoresist mask (oxygen plasma treatment) and to etch the second and third conductive layers (etching using a mixture of BCl_3 and Cl_2 as the etching gas).

The rejection asserts that Yamazaki discloses “after recessing the edge of the mask pattern, forming a second conductive layer pattern 124 by selectively etching the second conductive layer in the first conductive layer pattern in accordance with of the mask pattern (Figure 1C and Paragraph 0086)”. However, Paragraph 0086 discloses only a first etching process to form a first conductive layer pattern having a taper portion. In addition, Yamazaki does not describe “recessing the mask pattern” between a first etching step and a second etching step, particularly with respect to paragraphs 0083 to 0089, which describe a first etching process and a second etching process. With respect to Fig. 1C of Yamazaki, the mask pattern appears to be eroded as a result of the second etching process.

For at least these reasons, the rejection of claims 1 and 4, and their dependent claims, should be withdrawn.

With respect to claim 7, and its dependent claims, applicant requests reconsideration and withdrawal of this rejection because, as discussed at the interview, Yamazaki does not describe or suggest (1) decreasing a taper angle of an edge of a mask pattern by performing plasma treatment; (2) ***after decreasing the taper angle***, forming a first conductive layer pattern having a tapered edge by etching a second conductive layer and a first conductive layer by using the mask pattern; and (3) ***after forming the first conductive layer pattern***, forming a second conductive layer pattern by selectively etching the second conductive layer in the first conductive layer pattern, as recited in claim 7. While the rejection indicates that Yamazaki clearly shows such an arrangement in paragraphs 0085 and 0086, this is not the case. Rather, those paragraphs, in combination with paragraph 0084, describe a two-step etching process that does not include decreasing a taper angle of a mask pattern prior to forming a first conductive layer pattern. Accordingly, for at least these reasons, the rejection of claim 7 and its dependent claims should be withdrawn.

Similarly to claim 7, independent claim 11 recites (1) etching a third conductive layer and decreasing a taper angle of an edge of a mask pattern by performing plasma treatment; (2) ***after etching the third conductive layer and decreasing the taper angle***, forming a first conductive layer pattern having a tapered edge by etching a second conductive layer and a first conductive

layer by using the mask pattern; and (3) *after forming the first conductive layer pattern*, forming a second conductive layer pattern by selectively etching the second and third conductive layers in the first conductive layer pattern. Accordingly, the rejection of claim 11 and its dependent claims should be withdrawn for at least the reasons discussed above with respect to claim 7.

Similarly to claim 1, new claim 15 recites, among other elements, “removing a portion of the second shaped mask pattern remaining on the first conductive layer pattern to form a third shaped mask pattern;” and “forming a second conductive layer pattern by selectively etching the second conductive layer in the first conductive layer pattern in accordance with the third shaped mask pattern using a processing step different from a processing step used to form the third shaped mask pattern.” Likewise, new claim 17 recites, among other elements, “removing a portion of the second shaped mask pattern remaining on the first conductive layer pattern to form a third shaped mask pattern;” and “forming a second conductive layer pattern by selectively etching the third conductive layer and the second conductive layer in the first conductive layer pattern in accordance with the third shaped mask pattern using a processing step different from a processing step used to form the third shaped mask pattern.” Accordingly, claims 15 and 17 are believed to be allowable over the art of record for at least the reasons discussed above with respect to claim 1.

Applicant submits that all claims are in condition for allowance.

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The fees in the amount of \$850 in payment of excess claim fees (\$400) and the two-month Petition for Extension of Time fee (\$450) is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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